

630.766.2112 customer@chemimpex.com www.chemimpex.com

### SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION	

CATALOG #: 05481

NAME: Boc-D-citrulline

SYNONYMS: Boc-D-Cit-OH; (R)-2-Boc-amino-5-ureidopentanoic acid;

24 HR EMERGENCY (800) 535-5053 (USA)

TELEPHONE: 352-323-3500 (INTERNATIONAL)

TO REQUEST AN SDS: (800) 869-9290

CUSTOMER SERVICE: (630) 766-2112

### **SECTION 2. HAZARD IDENTIFICATION**

## **CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE

## **GHA LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS NONE

# SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C11H21N3O5

MW: 275.30

CAS RN: 121080-95-3

PURITY: ≥ 98% (NMR)

### **SECTION 4. FIRST-AID MEASURES**

### **DESCRIPTION OF FIRST AID MEASURES**

GENERAL ADVICE IMMEDIATELY REMOVE ANY CLOTHING CONTAMINATED BY THE

PRODUCT. MOVE OUT OF DANGEROUS AREA. CONSULT A

PHYSICIAN AND SHOW THIS SAFETY DATA SHEET

IF INHALED MOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL

RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN AND

**CONSULT A PHYSICIAN** 

IN CASE OF SKIN

CONTACT

IMMEDIATELY FLUSH SKIN WITH RUNNING WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.

WASH CLOTHING BEFORE REUSE. CONSULT A PHYSICIAN

**IMMEDIATELY** 

IN CASE OF EYE CONTACT IMMEDIATELY WASH SKIN WITH COPIOUS AMOUNTS OF WATER FOR

AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING OF THE EYES

BY SEPARATING THE EYELIDS WITH FINGERS. IF IRRITATION

PERSISTS, CONSULT A PHYSICIAN.

**IF SWALLOWED**DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO

AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT

A PHYSICIAN.

MOST IMPORTANT SYMPTOMS AND

EFFECTS, BOTH ACUTE

**AND DELAYED** 

THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2) AND/OR IN SECTION

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INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

NO DATA AVAILABLE

# **SECTION 5. FIRE AND EXPLOSION DATA**

**EXTINGUISHING MEDIA** 

SUITABLE EXTINGUISHING

**MEDIA** 

USE WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE OR

CHEMICAL FOAM.

SPECIAL HAZARDS
ARISING FROM THE
SUBSTANCE OR MIXTURE

CARBON OXIDES, NITROGEN OXIDES (NOX), SULPHUR OXIDES,

POTASSIUM OXIDES

ADVICE FOR FIREFIGHTERS

WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE

FIGHTING IF NECESSARY.

FURTHER INFORMATION

NO DATA AVAILABLE

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS,

PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES WEAR PROTECTIVE EQUIPMENT AND KEEP UNPROTECTED PERSONNEL AWAY. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. PREVENT FURTHER LEAK OR SPILL IF SAFE

TO DO SO.

FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PRECAUTIONS

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO

NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE

ENVIRONMENT MUST BE AVOIDED.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP PREVENT FURTHER LEAK OR SPILL IF SAFE TO DO SO. VACUUM, SWEEP UP, OR ABSORB WITH INERT MATERIAL AND PLACE INTO A SUITABLE DISPOSAL CONTAINER. CONSULT LOCAL REGULATIONS

FOR DISPOSAL

REFERENCE TO OTHER

**SECTIONS** 

FOR DISPOSAL SEE SECTION 13.

# **SECTION 7. HANDLING AND STORAGE**

PRECAUTIONS FOR SAFE HANDLING

AVOID CONTACT WITH SKIN, EYES, AND PERSONAL CLOTHING. WASH HANDS THOROUGHLY AFTER HANDLING. AVOID BREATHING FUMES. USE ONLY WITH ADEQUATE VENTILATION. WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES, AND EYE/FACE PROTECTION. KEEP AWAY FROM SOURCES OF IGNITION. MINIMIZE DUST GENERATION AND ACCUMULATION. KEEP CONTAINER TIGHTLY CLOSED. OPEN AND HANDLE CONTAINER WITH CARE. DO NOT EAT,

DRINK, OR SMOKE WHILE HANDLING. FOR PRECAUTIONS SEE SECTION 2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

STORE IN A TIGHTLY CLOSED CONTAINER WHEN NOT IN USE. STORE IN A COOL, DRY, WELL-VENTILATED AREA AWAY FROM

INCOMPATIBLE SUBSTANCES. KEEP AWAY FROM SOURCES OF

IGNITION.

RECOMMENDED STORAGE TEMPERATURE

Store at 0-8 °C

**SPECIFIC END USE(S)** 

FOR LABORATORY USE ONLY

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### **CONTROL PARAMETERS**

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT

VALUES.

### **EXPOSURE CONTROLS**

APPROPRIATE ENGINEERING CONTROLS

AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT. FACILITIES STORING OR UTILIZING THIS MATERIAL SHOULD BE EQUIPPED WITH AN EYEWASH FOUNTAIN. USE ADEQUATE VENTILATION TO KEEP AIRBORNE CONCENTRATIONS

LOW.

#### PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 USE

EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR

EN166 (EU).

SKIN PROTECTION HANDLE WITH GLOVES, GLOVES MUST BE INSPECTED PRIOR TO

USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER

USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD

LABORATORY PRACTICES. WASH AND DRY HANDS.

BODY PROTECTION IMPERVIOUS CLOTHING, THE TYPE OF PROTECTIVE EQUIPMENT

MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC

WORKPLACE.

**RESPIRATORY** WHERE RISK ASSESSMENT INDICATES AIR-PURIFYING **PROTECTION** RESPIRATORS ARE REQUIRED USE A DUST MASK TYPE

RESPIRATORS ARE REQUIRED USE A DUST MASK TYPE N95 (US) OR TYPE P1 (EN 143) RESPIRATOR. RESPIRATORS AND COMPONENTS MUST TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT

STANDARDS - NIOSH (US) OR CEN (EU).

CONTROL OF ENVIRONMENTAL EXPOSURE PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO

NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE

ENVIRONMENT MUST BE AVOIDED.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE White crystalline powder
ODOR NO DATA AVAILABLE
ODOR THESHOLD NO DATA AVAILABLE
pH NO DATA AVAILABLE

MELTING/FREEZING POINT

INITIAL BOILING POINT AND BOILING RANGE

FLASH POINT

EVAPORATION RATE NO DATA AVAILABLE FLAMMABILITY (SOLID, NO DATA AVAILABLE

GAS)

UPPER/LOWER NO DATA AVAILABLE

FLAMMABILITY OR EXPLOSIVE LIMITS

VAPOR PRESSURE NO DATA AVAILABLE VAPOR DENSITY NO DATA AVAILABLE

RELATIVE DENSITY

WATER SOLUBILITY NO DATA AVAILABLE PARTITION COEFFICIENT: NO DATA AVAILABLE

N- OCTANOL/ WATER

AUTO-IGNITION NO DATA AVAILABLE

TEMPERATURE

DECOMPOSITION NO DATA AVAILABLE TEMPERATURE

VISCOSITY

NO DATA AVAILABLE

EXPLOSIVE PROPERTIES

NO DATA AVAILABLE

OXIDIZING PROPERTIES

NO DATA AVAILABLE

**OTHER SAFETY** NO DATA AVAILABLE **INFORMATION** 

SECTION 10. STABILITY AND REACTIVITY

**REACTIVITY** NO DATA AVAILABLE

CHEMICAL STABILITY STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

POSSIBILITY OF HAZARDOUS REACTIONS

NO DATA AVAILABLE

CONDITIONS TO AVOID HEAT, FLAMES AND SPARKS

INCOMPATIBLE MATERIALS

STRONG OXIDIZING AGENTS

HAZARDOUS
DECOMPOSITION
PRODUCTS

CARBON MONOXIDE, NITROGEN OXIDES, HYDROGEN CHLORIDE

IN THE EVENT OF FIRE: SEE SECTION 5

# SECTION 11. TOXICOLOGICAL INFORMATION

# **INFORMATION ON TOXICOLOGICAL EFFECTS**

ACUTE TOXICITY NO DATA AVAILABLE

SKIN CORROSION/IRRITATION

NO DATA AVAILABLE

SERIOUS EYE DAMAGE/ EYE IRRITATION NO DATA AVAILABLE

RESPIRATORY OR SKIN SENSITISATION

NO DATA AVAILABLE

GERM CELL
MUTAGENICITY

NO DATA AVAILABLE

CARCINOGENICITY

IARC: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER

THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR

CONFIRMED HUMAN CARCINOGEN BY IARC.

ACGIH: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER

THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR

POTENTIAL CARCINOGEN BY ACGIH.

NTP: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER

THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR

ANTICIPATED CARCINOGEN BY NTP.

OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER

THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR

POTENTIAL CARCINOGEN BY OSHA.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

SPECIFIC TARGET ORGAN

**TOXICITY - SINGLE** 

**EXPOSURE** 

NO DATA AVAILABLE

SPECIFIC TARGET ORGAN

**TOXICITY - REPEATED** 

**EXPOSURE** 

NO DATA AVAILABLE

ASPIRATION HAZARD NO DATA AVAILABLE

**ADDITIONAL** RTECS: NOT AVAILABLE

**INFORMATION** TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL AND

TOXICOLOGICAL PROPERTIES OF THIS SUBSTANCE HAVE NOT BEEN

THOROUGHLY INVESTIGATED.

# SECTION 12. ECOLOGICAL INFORMATION

TOXICITY NO DATA AVAILABLE

PERSISTENCE AND DEGRADABILITY

NO DATA AVAILABLE

**BIOACCUMULATIVE** 

**POTENTIAL** 

NO DATA AVAILABLE

MOBILITY IN SOIL NO DATA AVAILABLE

RESULTS OF PBT AND VPVB ASSESSMENT

PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY

ASSESSMENT NOT REQUIRED/NOT CONDUCTED

OTHER ADVERSE

**EFFECTS** 

NO DATA AVAILABLE

### SECTION 13. DISPOSAL CONSIDERATIONS

### **WASTE TREATMENT METHODS**

PRODUCT OFFER SURPLUS AND NON-RECYCLABLE CHEMICAL TO A LICENSED

DISPOSAL COMPANY. CONTACT A LICENSED PROFESSIONAL WASTE

DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

CONTAMINATED PACKAGING

DISPOSE OF AS UNUSED PRODUCT.

# **SECTION 14. TRANSPORT INFORMATION**

DOT (US)

**NOT DANGEROUS GOODS** 

**IMDG** 

**NOT DANGEROUS GOODS** 

IATA

**NOT DANGEROUS GOODS** 

# **SECTION 15. REGULATORY INFORMATION**

SARA 302 COMPONENTS SARA 302: NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE

REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

SARA 313 COMPONENTS SARA 313: THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL

COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY

SARA TITLE III, SECTION 313.

MASSACHUSETTS RIGHT

TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT

TO KNOW ACT.

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS RN REVISION DATE

Boc-D-citrulline 121080-95-3

**NEW JERSEY RIGHT TO KNOW COMPONENTS** 

CAS RN REVISION DATE

Boc-D-citrulline 121080-95-3

CALIFORNIA PROP. 65 COMPONENTS THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR ANY

OTHER REPRODUCTIVE HARM.

# **SECTION 16. OTHER INFORMATION**

SDS LEGEND

MW: MOLECULAR WEIGHT
MF: MOLECULAR FORMULA

VOC: VOLATILE ORGANIC COMPOUNDS

ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL

**HYGINISTS** 

CAS RN: CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PEL: PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV: THRESHOLD LIMIT VALUE (ACGIH)

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Version 1.0 Revised 08/06/2024

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